

LATERAL HIGH-VOLTAGE JUNCTION DEVICE

ABSTRACT

A lateral high-voltage junction device for over-voltage protection of an MOS circuit includes a substrate having a first junction region separated from a second junction region by a substrate region. An MOS gate electrode overlies the substrate region and is separated therefrom by a gate dielectric layer. Sidewall spacers reside adjacent to opposing sides of the MOS gate electrode and overlie the substrate region. The substrate region is defined by a junction-free semiconductor region between the first and second junction regions. An input protection circuit employs the lateral high-voltage junction device to transfer voltage transients to a ground node.